

BUSINESS ISSUES IN TECHNOLOGY Computer Letter

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Information, Please

Why the online services are starting to attract so much attention from companies hoping to sell interactive hardware and software

The pas de deux performed last spring by Paul Allen and **America Online** was a refreshing change from the takeover dances of the 1980s, when brutal financial manipulators tried to capture boring old companies in order to break them down into possibly profitable pieces. We're not privy to the software billionaire's thoughts, but we assume that Mr. Allen's intent in trying to buy control of a fast-growing online information services company was to gain a leading position in a technology that could turn out to be crucial to the development of the computer and information industries over the rest of the decade and beyond. Who could blame him? Plenty of other smart and rich people — including Mr. Allen's former partner Bill Gates — have been working hard to assemble the elements that will link all those modem-equipped computers, mobile communicating devices, and interactive television sets with the information that will make them valuable. The starting point for such efforts has often been today's online information services.

That's perhaps a bit surprising, considering the limited growth these services have had until recently. As we show in the chart on Page Three, there are fewer than six million subscribers to online services of all types in the United States, and it is widely conceded that many of them have signed up for more than one service, making the actual number of individual subscribers closer to three million. (The chart uses numbers for 1991, but we suspect that the services still reach less than 4% of the 100 million PCs currently installed.) Home consumers account for half the subscriber base, but they bring in only 3% of the revenues. This has been mainly a business information market, dominated by the providers of credit reports, airline flight information, financial data, and the like. As long as it was seen in that light, the market was expected to grow at an unexciting pace of 10% to 11% per year to perhaps \$35 billion by 1997 from \$11 billion in 1991.

Assuming that the new access technologies develop on schedule, such forecasts will seem hopelessly conservative. We're now hearing projections that range up to 20 million subscribers by 1996, depending on how fast products such as personal digital assistants take off. By the end of the decade, a confluence of online services on PDAs, interactive TV, and screen phones could lift the subscriber count to the neighborhood of 100 million, meaning 50 million or so individuals subscribing to an average of two services each.

The numbers are probably less important than the implications of that kind of ubiquity. Online services will be the nervous system for a new kind of information industry, providing important opportunities to generate revenue and set standards. They will constitute an entirely new medium that people will access through a wide variety of devices and communications channels.

If this scenario is anywhere near the mark, it's easy to understand why so many computer and communications companies have been pursuing partnerships with the online services — or making plans to compete with them. America Online, in fact, is described by its president, Steve Case, as a veritable tapestry of alliances. The best known is the one with **Apple Computer**, in which Apple will pay a minimum of \$15 million over

(Continued on Page Two)

ONLINE SERVICES

Continued from Page One

five years to license America Online's core technology. Mr. Case has also signed more than 30 alliance deals with newspapers and other companies that are creating content services, a number of bundling agreements with computer and modem vendors, and a cross-marketing arrangement with **Sprint** under which the two companies market each other's services to their respective customers. America Online is also pursuing talks with **AT&T**, **McCaw Cellular Communications**, **SkyTel's** national paging service, and cable operator **Time Warner**.

Meanwhile, **Prodigy**, the largest online service, with over 50% of all subscribers, has joined forces with **Cox Enterprises**, a leading cable operator and owner of 17 newspapers, to begin delivering several newspapers and news archives electronically. The two companies are also discussing the delivery of Prodigy's information services to home television sets via Cox's cable systems. And just last week, AT&T took a significant step toward building an online information and entertainment empire when it bought a 20% interest in **Sierra Network**, the interactive game network run by **Sierra On-Line**.

Strength in numbers

The intense interest in consumer online services is driven in part by an upsurge in subscribers over the past couple of years as more and more personal computer vendors have started bundling modems with their desktop and portable products. Lower prices and improved performance of modems have also helped to increase consumer willingness to use phone lines for news reports, stock quotes, electronic mail, and customized news research. Prodigy saw its subscriber count jump from 460,000 in September of 1990 to more than two million today. All the publicity about information highways also seems to be spurring subscriber interest. America Online went from 250,000 individual subscribers in mid-April to more than

300,000 by the end of June, a 20% increase in just ten weeks. **Genie** reports a 10% increase in its user base in the last three months.

As the table on Page Five shows, the four major consumer information services — America Online, **CompuServe**, **Genie**, and Prodigy — now have more than four million subscribers. AppleLink, formerly

The interest in online services is partly due to a big upsurge in subscribers.

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*Technology created
by the services will
help companies
planning to sell
interactive products.*

an internal information service that Apple has started selling commercially, has 55,000 subscribers. The leader in dollar terms is Prodigy, which according to estimates by Alex. Brown & Sons, will generate revenues of \$230 million this year, 38% of an industry total of \$604 million.

Profitless prosperity

Such numbers, of course, aren't large enough to have much impact on the top-line performance of most computer and communications companies. And profitability has been a sometime thing for the online information industry. Prodigy, created as a joint venture between IBM and Sears, Roebuck in 1984, spent six years developing its technology and hasn't been profitable in any of its three years of commercial operation. America Online and CompuServe are profitable, but a recent price cutting move by America Online raises the spectre of a price war.

At this point, obviously, the motivating factors for jumping into online information have much more to do with strategic positioning than with making a fast buck. The fact is that for all the loose talk about interactive computers, telephones, and TVs, these services offer the only significant examples of why consumers might buy such devices. Much of the technology they have developed, from user interfaces

to back-end services and billing, will be directly applicable to the problems that large system and software companies will face as they try to deliver a variety of products that derive much of their value as information access devices.

Here they come

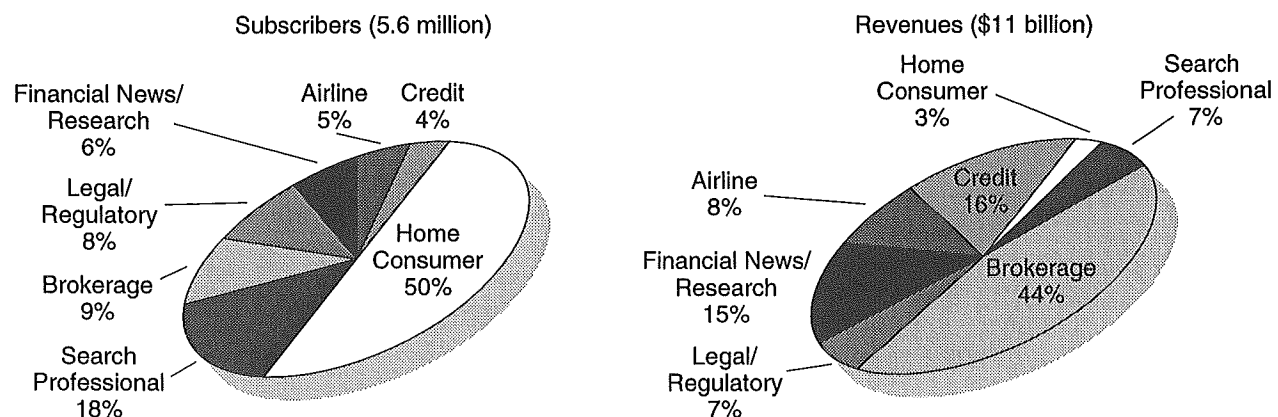
The need for such technology will soon be urgent. Today, interactive services are available mainly over telephone lines and accessed with modem-equipped computers. By this fall, they will be available via wireless and cellular network links to handheld devices such as Apple's Newton and **Tandy/Casio's Zoomer**. In not too many years, we trust, they will be reaching TV sets over broadband cable and miniature screen phones over Personal Communication Services networks. The challenge for the online service companies and the equipment vendors alike is to embrace a diversity of access devices and communications conduits in an integrated delivery system so that customers will have choices as to how they access services.

Out of the nest

As part of what seems at times a desperate effort to redefine itself, Apple has become the first systems company to jump squarely into the interactive online service business. First, Apple licensed from America Online a complete software

Who Wants to Know?

The bulk of information service revenues comes from business subscribers



U.S. subscribers to online services and market revenues by market segment for 1991. Revenues include overseas revenues of U.S. companies.
Source: Apple Online Services.

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infrastructure for running an online service. The package includes host and client software, client interfaces, gateways, customer service systems, documentation: the works. Then in April, Apple quietly began marketing AppleLink to mobile business professionals and expanded its content from product-related information to news, weather, travel, and reference material. While AppleLink hasn't yet incorporated the America Online technology, we expect it to start looking and feeling more and more like a commercial online service.

As a leading vendor of laptop computers and (soon) of what we like to call picocomputers, Apple has considerable leverage in selling an information service. In July, Apple launched a mailing to existing PowerBook owners, giving them steep discounts on AppleLink. Initial sign-up fees are \$19.95 (versus the normal \$70 fee), and PowerBook subscribers also receive a 40% discount off normal hourly pricing. Apple will soon begin bundling AppleLink with every PowerBook sold. While this version of AppleLink is aimed at PowerBook-toting mobile business professionals, Apple is planning an entire series of online services tailored to other markets and devices.

Media message

Apple's goal, like America Online's, is to turn interactive information services into a new media form. Apple plans to do so by changing both the subscriber experience and the publisher experience. Online information services today are so computer-centric that a subscriber really has to be computer-literate to use them. Apple's goal is to make the subscriber's experience effortless by presenting information highly targeted to his needs in an easily-navigable form. On the other side of the equation, Apple also wants to make use of its experience in supporting third-party software developers to "empower" (as the marketing folks say) hundreds of content publishers with tools to create new value-added features and an architecture that will make their services available in other countries and languages.

Color them blue

Another great opportunity for leverage lies in IBM's ties to Prodigy. **IBM Personal Computer Co.** now bundles Prodigy with

every ThinkPad notebook it sells, as well as with many of its desktop computers. Most buyers receive a trial service lasting one to three months.

Prodigy is multiplying its options by getting in early on the opportunities that lie ahead in expanded cable television service. In its talks with Cox, Prodigy is making plans to deliver interactive content over the Cox cable system — either in the form of a full Prodigy Channel or as customized information that would be tailored to specific programming such as sports programs, financial programs, or documentaries. In the case of a sports show, for example, a portion of the screen could be dedicated to delivering information-on-demand such as scores, batting averages, or running descriptions of other games. During a financial show, a viewer might use the interactive screen to access a discount brokerage firm.

Where the grass is greener

The other major consumer services, H&R Block's CompuServe and General Electric's GENie, have taken a less-than-aggressive approach to alliance building. CompuServe, which has 1.3 million subscribers, is seeing its greatest growth potential abroad, where it already has an established lead over competitors. International sales doubled over the past year to 60,000 users in Western Europe. However, CompuServe too is in talks with several national cable companies and PDA manufacturers about potential relationships. In particular, CompuServe is interested in using CD-ROM technology to provide subscribers with large amounts of static information that can be updated using the online service. CompuServe, however, wants to move carefully in order to remain profitable.

GENie, meanwhile, is not pursuing any partnerships but is concentrating instead on expanding its offerings of games, bulletin boards, and gateways to databases. GENie currently claims the largest variety of electronic games in the online world with 15 titles including *CyberStrike*, *Air Warrior*, and *DragonsGate*.

What nothing succeeds like

The real success story recently, in terms of growth, profitability, and technology, is America Online. The company, which

Apple and IBM are starting to use their hardware products to sell online services.

went public in March, has been growing at a rate of 65% per year and now may be accelerating if the recent flurry of new subscriptions proves durable. When Mr. Case reports public results for the first time in August, Wall Street expects to see earnings of about \$6 million on annualized revenues of better than \$50 million.

America Online recognized the need to add real value to the information it was dispensing.

America Online has done well in part because it recognized early on that computer-based information services need to add distinct value to the information they dispense. In particular, the company has exploited the interactive nature of data communications by creating what Mr. Case calls electronic communities of like-minded subscribers who converse in hundreds of electronic forums. Only a third of America Online's revenues comes from the usual news and shopping services; another third is generated by e-mail and interactive communication and the rest by computer-related services such as delivering shareware products. The

opportunity to let readers interact with writers and editors is a big attraction for magazines and newspapers — including *Time*, the *Chicago Tribune*, and the *San Jose Mercury News* — that have started using America Online.

The bigger they are

As large technology companies enter the online marketplace, we expect the landscape to change dramatically. The leading online service companies today will be joined and perhaps overshadowed by such giants as Apple, IBM, and — sooner or later — AT&T and **Microsoft**. But size may be less important than sound strategic thinking because online services won't be one mass market but a continuum of specialized markets, perhaps linked by a few standard communication modes.

We think Apple and America Online are right to assume that the industry will divide up, much as the magazine industry has segmented, along interest lines. Apple's strategy for matching content with specific audiences and creating individual services tailored to those audiences stems from that premise. Unless services are carefully matched to the interests of an audience, usage will suffer, and an online company will be saddled with the infrastructure to support a huge subscriber base and insufficient fees to offset its costs.

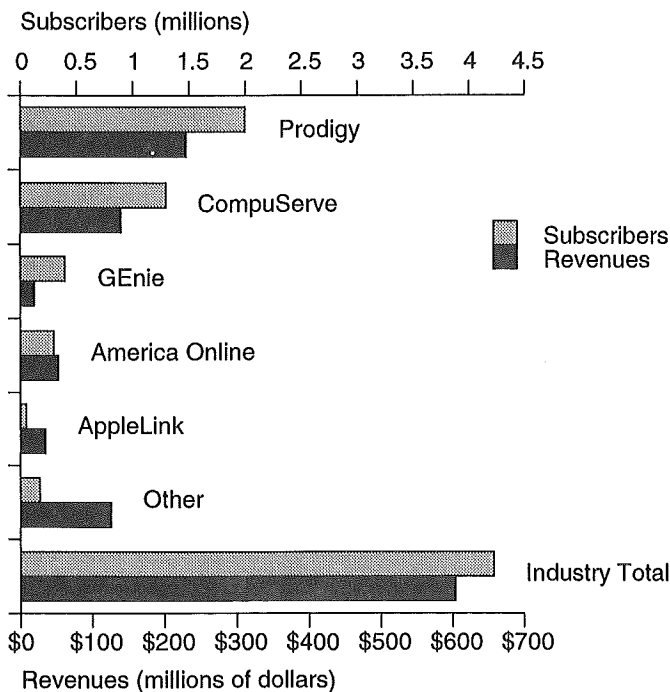
That scenario is one explanation for the financial woes of Prodigy, which invested heavily in the telecommunications links and computer equipment for a massive decentralized system. Three years of losses finally forced Prodigy to reorganize, downsize, and raise prices to help offset its heavy cost burden. But observers also note that Prodigy's service is directed at an amorphous audience of consumers who may represent the biggest subscriber market but whose actual usage of online services is very low. Each of Prodigy's two million subscribers generates an average of \$115 per year, while America Online's 300,000 provide an average of \$176.

Power elite

The strength that systems and software companies bring to the information services table is considerable. First of all, they have long experience with graphical

Sharing the Wealth

Prodigy leads the way in consumer online services



Estimated subscribers in millions (top scale) and revenues in hundreds of millions (bottom scale) for consumer online information services in 1993.
Source: Alex Brown & Sons, Technologic Partners.

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Handheld devices will change the whole concept of what people can do with online services.

operating environments and a huge base of customers who are familiar with that interface. Secondly, they are skilled at supporting the third-party infrastructure needed to build a value-added service. Finally, they sell millions of devices every year that are potential platforms for the service. By bundling the service with the box or the software, these companies can drive down subscriber acquisition costs — the highest cost in running an electronic services business.

Within two years, we believe pico-computers will begin to drive online service sales in part because their pricing and portability will make them relevant to a much wider range of people and markets than is now served by personal computers. Apple is already developing pico-computers whose whole design is focused on online services. These products will change the concept of what people can do with online services. No longer will they be used strictly to look up archival information or to check in on bulletin boards. People will use online services to access travel directions and restaurant reviews, check movie reviews, and get up-to-the-minute news on specific issues and industries. Ultimately, the services, rather than the devices, may become the driving forces. Today, people buy a computer and discover they can access a range of services. Five years from now, people will decide they want a particular service and the service will determine the device.

Better part of valor

While the systems and software companies will bring many strengths to the online information business, the existing players won't go away. In fact, we'd expect America Online to do well in part because of its willingness to embrace the new entrants. In deciding to license its core technology to Apple, America Online made a strategic decision to position its software as a standard operating environment for this medium. The hope is that new companies wanting to develop their own information services — companies ranging from news organizations to telephone and cable network operators — won't have to develop their own systems software. Instead, they can license it and give America Online a continuing source of revenue.

Because of the strong installed bases of

Prodigy and CompuServe, and because of the diverging interests of different market segments, we don't expect any one company to run away with the whole market. Rather, there will most likely be a handful of major service providers plus many specialists serving a well-defined customer subset. Apple will probably focus on Newton and Macintosh users, Microsoft on users of Windows computers and Winpad-based handhelds. AT&T may specialize in messaging, while America Online offers integrated services cutting across a variety of delivery devices. Prodigy and CompuServe will serve as independent alternatives for content developers who don't want to partner with Apple or Microsoft.

Knock, knock

Some of the best investments in the Nineties will be found among content providers, which will fall into two main categories. The traditional media companies, such as magazine and newspaper publishers and media conglomerates, may predominate at first. But there will also be an opportunity for new companies to get into the content game, developing and licensing a wide range of online material and services. A prototype might well be **Continuum Productions**, started by Microsoft's Mr. Gates, which is chartered with creating a wide-ranging database of text, images, and video clips on a variety of cultural and current topics. Continuum has been working to obtain non-exclusive distribution rights to this material and ultimately plans to make it available online. We wouldn't be surprised to see Microsoft launch its own online service.

Companies like **Worldview Systems**, based in San Francisco, and **Infonautics**, headquartered in Wayne, Pa., should proliferate. Worldview provides online travel information, while Infonautics is developing an online information database service for the education market. And it seems that Mr. Allen, the spurned suitor of America Online, has turned his attention to content by founding a company in Bellevue, Wash., called **Starwave**, which is charged with developing online content in such fields as health and recreation. For the time being, entrepreneurship may be the most rewarding way to play the online information services game. □